

FISHERY STATUS OF *BABYLONIA SPIRATA* AT PORTO NOVO, SOUTHEAST COAST OF INDIA

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ABSTRACT

A survey carried out during March-August 1993 to study the fishery status of the marine snail *Babylonia spirata* along the coast line of Porto Novo suggested Annappanpettai as the chief landing centre. The total landing of these gastropods was about 211 tons. The common gear to fish these gastropods are traps operated from mechanized catamarans. The economic value of meat, operculum, and shells of *B. spirata* was Rs.40/kg., Rs.400/kg, and Rs.2/kg respectively. The quantity of boiled meat was about 54 tons, operculum 11 tons, and shells 157 tons. The total value was estimated at about Rs.22.22 lakhs (US\$.74,100) for the boiled meat, Rs.4.24 lakhs (US\$.14,133) for the operculum and Rs.3.15 lakhs (US\$.10,499) for the shells.

INTRODUCTION

There is an increased interest in assessment of potential food resources from the oceans. The marine molluscs form the important part of the fishery, next to crustaceans in terms of commercial value. The meat of gastropods has been considered a delicacy and is eaten in quantities in various parts of the world. They constitute a good source of protein, glycogen and minerals on a par with other animal foods conventionally eaten by man (Durve and Bal, 1961; Giese, 1966; Ansari *et al.*, 1981). The magnificent shells of gastropods are used for personal decoration, ornamentation, and in jewellery and lime-making, and in the ancient times as utensils. The shells are cleaned, polished and sold as curios. *Babylonia spirata*, is being sought for food, shell and operculum, along with other commercially important gastropods that fetch valuable foreign exchange. This species has been an important source of seafood in the Indo-Pacific region for many years. In India, most of the people ignore them and are prejudiced against them since they have not consumed that meat before. But the export value of this mollusc has led to the development of active fishery of this shellfish in different parts of India. Therefore, the extensive resources of *B. spirata* along the coast line of southeast India are heavily fished, resulting in depletion of the natural stocks to a large

extent. A survey was carried out along the Porto Novo coast to assess the quantity and value of *B. spirata*.

Study area

The present study was carried out in Annappanpettai, a small fishing village located 13 km north of Porto Novo (Lat. 11° 29'N; Long. 79° 46'E), on the south-eastern coast of India. Annappanpettai appears to be the chief landing centre of the gastropod, *B. spirata*. Weekly surveys were carried out and the fisherfolk were interviewed on the landing of *Babylonia sp.* during the period of March - August 1993.

Description of the snail

B. spirata is a carnivorous marine gastropod in the family Buccinidae. It is commonly called 'Spiral Babylon' and locally called 'Dove egg shell' ('Puramuttai Chanku'). The shell is thick and heavy with a large and pointed apex, almost straight sided body whorl with a very characteristic colour pattern of round brownish patches on white background of the shell. The aperture is wide, and ovate with an apical notch bound by a ridge on the inner side only. The spire whorls appear to be pushed down into the body whorl and a deep groove divides them. The

operculum fits into the aperture closing it completely. This species is a continuous breeder and is abundantly available in all the seasons except those of the monsoon. It is widely distributed in the Indo-Pacific region. In India, this species is well represented on the Indian Peninsula at places such as the Gulf of Mannar, Poompuhar, Nagapattinam, Madras and the waters around the Andaman & Nicobar islands.

Methods of fishing

The *Babylonia* shells are collected at depths of 5 - 20 metres by a special trap, locally called "Katchavalai". The trap consists of an iron ring (diameter 35 cm) to which a bag like net with a mesh size of one inch is attached. The ring is tied with a nylon rope in a criss cross manner. Bait of dried octopus or eel is attached to the rope. The trap is laid in shallow beds suspended by a nylon rope of short length attached to the main rope which carries of 25 - 40 traps separated by 1 m each. The whole unit is operated from a mechanized catamaran. The snails are attracted by the smell of the bait and move towards the net to feed on the bait tied onto the ring and get entangled in the net. After half an hour the traps are retrieved and the entangled shells collected by the fishermen. Traps are then cleaned and placed again in the shallow water.

Fishing activity

In Annappanpettai, the fisherfolk depend largely on *Babylonia* fishery. Unfortunately they only earn a meagre income from the fishery. The people of this village are relatively poor and they possess only 'catamarans' as fishing crafts. However, some do possess mechanized catamarans bought with the help of bank loans. They venture to the sea in their catamarans by 5 a.m. and lay the traps on the *Babylonia* beds. Each catamaran engaged in *Babylonia* fishing usually carries 2 - 4 persons. About 21 catamarans are engaged in *Babylonia* fishery regularly and fishing lasts 6 - 7 hours a day. *Babylonia* fishery is carried out all through the year, except the three monsoon months (Oct. - Dec.); the best season is from January to April. Out of 21 catamarans, 14 are non-mechanized and 7 are mechanized. The number of traps operated for fishing from the cata-

maran depends on the efficiency of the catamaran. Nonmechanized ones carry about 25 - 40 traps while a mechanized catamaran works with 60 - 70 traps. The total landing of *B. spirata* in Annappenttai is shown in Table 1.

Table 1. Total landing of *B. spirata* in Annappenttai.

MONTH	No. of Catamaran operating		Monthly landing (tons)		Total Landing (tons)
	mech.	non-mech.	mech.	non-mech.	
March	7	14	21.6	25.2	46.8
April	7	13	22.3	26.0	48.3
May	7	14	19.5	23.0	42.6
June	6	13	15.5	16.8	32.3
July	6	13	12.0	11.8	23.7
August	6	14	9.0	7.1	16.2
				Total	211.0

Utilisation and processing

The raw shells brought by the fishermen are collected and dumped in godowns by the shell traders. The soft parts of the animal are removed after boiling in large aluminum vessels. They are pit cured in the case of dead animals. When the soft body parts have been removed, the shells are cleaned and graded. The shells are initially treated with diluted HCl and caustic soda for removing the periostracum layer of the shell. The shells become highly attractive and versatile after treatment with the acid and alkali. These cleaned versatile shells further undergo processing which involves various steps like boiling, bleaching, sharpening, engraving and painting so as to improve the market value of these shells bought by handicraft establishments.

Economic importance

These gastropods have received considerable attention due to their economic importance and the increased demand for the meat of these snail from the Western countries. At the beginning of our survey, it was noticed that the market price of the *Babylonia* snails was about Rs.5/kg and in a period of two months it rose to Rs.10/kg and Rs.11/kg. Presently, the market price of the boiled snail meat is about Rs.40/kg. After the boiled meat is removed, the shells are bought by shell vendors at Rs.2/kg. The babylonian shells have got a splendid colour pat-

tern on their shells and therefore the cleaned and polished shells are used by interior decorators. A well polished *Babylonia* shell fetches Rs.3/shell. Beautiful door curtains, key chains, pen stands and craftsmen carvings, mementos and other novelties are made out of small *Babylonia* shells. There is a good market for them not only in India but also in the Western countries. Door curtains made of these snails costs Rs.50/-. Key chain Rs.5/- and the costs of other novelties range from Rs.35-65. The market is fast growing and the need for popularising this industry is most essential. These handicraft items are widely sold in almost all cities and tourist centres in India.

Further, the opercula of these shells have also re-

ceived considerable attention, following that of the muricid and strombus shells. But, the market price is considerably lower than the operculum of other gastropods. The market price of the babylonian operculum is Rs.400/kg. However, opercula collected from the local fishermen by the shell merchants are believed to fetch a much better price than the money paid to the fisherfolk. These opercula are believed to be used in perfume and cosmetics. The merchants do not reveal the real purpose for which it is being used and the reason for the relatively high market value of opercula still remains a mystery. The market value of the meat, shells & opercula is shown in Table 2.

Table 2. Total quantity (kg) and value (Rupees) of boiled meat, operculum and shell in Annappenpettai landing centre.

MONTH	Boiled meat (kg)	Value of boiled meat		Operculum (kg)	Value of operculum		Shells (kg)	Value of shells	
		Rs./kg	Total Rs.		Rs./kg	Total Rs.		Rs./kg	Total Rs.
March	11,708	40	468,300	2,340	400	936,000	35,123	2	70,245
April	12,075	40	483,000	2,415	400	966,000	36,225	2	72,450
May	10,676	43	459,025	2,232	400	892,600	31,955	2	63,910
June	8,085	45	363,825	1,617	400	646,800	24,255	2	48,510
July	5,932	45	266,940	1,187	400	474,600	17,798	2	35,596
August	4,042	45	181,890	809	400	323,400	12,128	2	24,256
Total	52,517		2,222,980	10,600		4,240,000	157,484		314,967

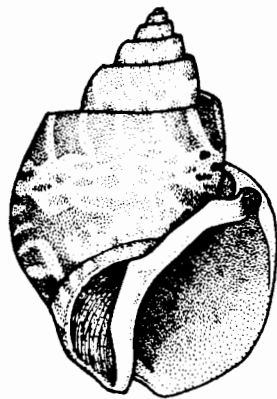
CONCLUSIONS

The main fishing centre for babylonian gastropods is Annappanpettai near Porto Novo on the south-eastern coast of India. Eventhough this fishery constitutes an important part of the capture fisheries in this area, lack of skill and facilities hamper the growth of this fishery. Besides this, the fishermen are not aware of the natural stock of *Babylonia* and have started fishing the juveniles of these species recently. Suggestions to overcome this problem are furnished below.

1. Effective measures should be taken to assess the magnitude of these resources so that over exploitation and destruction of these stock is avoided for the sustained development of this fishery.
2. The nutritional qualities of this molluscan meat should be popularised to create a local demand for it.
3. Hatchery and grow out culture of these gastropods could further enhance their production.
4. Advanced technology enabling the processing and canning of this snail meat would mean a greater demand for exporting this meat.
5. Fishermen should be provided with adequate bank loans to develop and organize fishery in their coastal zones.
6. Quasi Government co-operative societies should be established to buy the snails and to prevent the exploitation of fisherfolk by middlemen.

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Babylonia spirata L., 1758. PMBC 570.
Drawing by Patairat Singdam